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ABSTRACT

The schools have not met the challenge of preparing today's youth, many of whom lack both purpose and plans. This challenge to education can best be met through psychological studies and the application of psychological knowledge in the development of new systems of education. Some of the primary needs are: (1) an understanding by the student of his own values, interest, current level of ability; (2) a reasonable degree of skill in decision making and planning; (3) knowledge and skill in the management of behavior and behavior modification; (4) a sophisticated procedure for identifying the program of studies required by each student on the basis of his plans for individual fulfillment; (5) identifying the procedures which will be most effective for assisting the student to learn those abilities and knowledges he has selected; (6) improvement of measuring instruments if these are to be effective in their new roles; (7) the development and application of techniques for preparing teachers for the new roles required by these changes in education; and (8) the development and monitoring of new systems in education. Both David Markle and Jerry Short have developed major improvements and Project Talent Five Year Follow-Up data also shows great promise as a contributor to the new type of educational system which is needed. (SJ)

THE PSYCHOLOGIST'S ROLE
IN
YOUTH'S QUEST FOR FULFILLMENT

Presidential Address - Division of Educational Psychology
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In discussing the psychologist's role, it is desirable to do so in relation to various possible sets of values. Probably the most popular and relevant values to consider are those for which our professional colleague, John W. Gardner, has been such an eloquent spokesman. To quote from his popular book, Excellence: Can We Be Equal and Excellent Too?*

For most people, happiness is not to be found in this vegetative state (a state in which all of one's wishes are satisfied), but in *striving toward meaningful goals*. The dedicated person has not achieved all of his goals. His life is the endless pursuit of goals, some of them unobtainable. He may never have time to surround himself with luxuries. He may often be tense, worried, fatigued. He has little of the leisure one associates with the storybook conception of happiness . . .

Dr. Gardner states that *excellence* is a goal to be pursued by all people. He proposes that each individual apply his own unique talents to achieve excellence in the activities selected for both vocational and avocational pursuits. He also suggests that all people need to attend to the goals of society at large.

Dr. Gardner notes, however, that the idea of excellence is fairly abstract. To inspire and sustain people as they strive for excellence, he suggests we need a moving and meaningful ideal such as individual fulfillment. He goes on to say:

This ideal is implicit in our convictions concerning the worth of the individual. It undergirds our belief in equality of opportunity. It is expressed in our conviction that every individual should be able to achieve the best that is in him.

* Gardner, John W. Excellence: Can We Be Equal and Excellent Too? New York: Harper & Row, 1961.

In discussing the implications of this ideal of individual fulfillment for education Dr. Gardner says:

If we accept this concern for individual fulfillment as an authentic national preoccupation, the schools and colleges will then be the heart of a national endeavor. . . It is the sacred obligation of the schools and colleges to instill in their students the attitudes toward growth and learning and creativity which will, in turn, shape the society.

Although many of us share Dr. Gardner's views, it is useful to explore the implications of other sets of values for the educational development of our youth. It is easily seen that most philosophical views lead to the full development of the talents of all individuals. It also seems likely that even a philosophical view that gives no importance to the individual and his self-actualization would conclude that, to develop the available talents for society's use, the student should be made responsible for his own individual development once his goals have been determined for him. In our American democracy it is expected that each individual will set his own goals and be his own taskmaster in striving to achieve them.

If we accept the school's central role in assisting with the individual fulfillment of each of our young people, what implications does this have for education and what are the needs of our young people which are not now being filled by the educational program in the schools? The 1960 Project TALENT survey and a recent 1970 update of some of the relevant questions reveals very clearly that students do not have the necessary information either about themselves or the world to formulate personal goals and plan a program aimed at individual fulfillment. A brief review of some of these findings will provide an appropriate background for a discussion of some of the tasks of psychologists.

The serious lack of information of high school students regarding occupations is clearly shown by the Project TALENT findings that only 18.6% of the twelfth grade and 13.5% of the eleventh grade males planned the same career five years after finishing high school that they were planning when in these grades. For females, the corresponding figures were 26.1% for twelfth grade students and 20.8% for eleventh grade students. The figures for girls showed a little more stability. Probably this was due to the relatively large number of girls checking their career plans as housewife on both occasions and the smaller number of occupations which attracted most of the girls.

The shift out of some fields and into others among boys is well illustrated by the fact that about 21% of the boys in the twelfth grade indicated they planned careers in engineering, physical science, or mathematics. Five years out of high school only 7% of all of the twelfth grade group indicated such plans. Of these 7%, only about half were boys who had indicated plans for a career in one of these fields while in the twelfth grade.

The reverse trend was shown in business and sales which was indicated as the career plan for about 8% of the twelfth grade boys, but was reported as the choice of more than 17% five years after they had left high school. However, this larger group included less than a third of the twelfth grade boys who had initially indicated plans for a career in business and sales. Thus, only one out of six of the students planning such careers at this latter time had indicated it as their career plan when they were in the twelfth grade.

These changes came as no great surprise because as part of the survey in 1960 only 28% of the boys and 43% of the girls had indicated that their career plans were either "very definite" or "completely decided." The remainder indicated their plans were either "fairly definite" or less definite than that. It can well be asked whether this situation has improved in the past ten years. A survey of the eleventh graders in approximately a fifth of the original Project TALENT schools conducted in the spring of 1970 suggests that today's students are even less definite in their plans. Preliminary findings indicate that only about 20% of the boys and 27% of the girls in this year's class indicated that they were very definite or completely decided about their career plans. Although there is some question as to when the students' plans should become "definite," it seems clear that they need to be provided more information as a basis for developing their plans.

Further light is shed on the career choices and values of these young people by the data collected in 1960 regarding the importance they indicated they would give to each of several factors in choosing a job. In 1960 the twelfth grade boys indicated that the factor of most importance to them was "work that seems important to me." Of nearly as great importance, were "opportunity for promotion and advancement in the long run," and "job security and permanence." The twelfth grade girls also indicated that "work that

seems important to me" was of great importance to them, but indicated as second in importance, "meeting and working with sociable, friendly people." They also gave high importance to job security and opportunity for advancement, though not quite as high as the boys. Although not selected as being quite as important as these factors more than half of both the boys and girls indicated that "good income to start or within a few years" and "freedom to make my own decisions" were very important to them.

The preliminary results from the 1970 survey indicate that "work that seems important to me" is still the most important factor for both boys and girls in considering choice of job. However, 1970 results show that for the boys, the next most important item is "freedom to make my own decisions." This is illustrated by the responses of a couple of boys in the 1970 survey when asked their views on an ideal occupation. One boy's answer stated this desire clearly if a little bluntly, when he said, "I want to do with my life what I want to, and not what other people want me to." Another said, "I would like to have an occupation I can enjoyed (sic), something that isn't boring. I want an occupation where I can make most dissission (sic) by myself." The 1970 results suggest that opportunity for advancement, job security, and good income have dropped significantly in their importance as factors in job choice.

For the girls, the same two factors as in the 1960 survey are reported as of most importance in the 1970 study, but "freedom to make my own decisions" has also become substantially more important for them and all other factors including good income, job security, and opportunity for advancement are reported as significantly less important than 10 years earlier. The girls' views as expressed by two of their more articulate representatives are first: "An occupation best suited for me will be one that I feel is important. I must experience a feeling of achievement - one that makes me feel that my services are needed. Ideally it would be one that would be in constant contact with people." The second girl, echoing the boys' bid for freedom, said, "What I want out of life is to have a job, doing what I want, not what someone expects out of me. A job should be something that I like, some work that I will enjoy and learn from. I would like to be either a writer or an artist. In these professions, I can express my feelings without having someone tell me what to do."

These surveys also provide data from the students with respect to the appropriateness and the effectiveness of the school program. With respect to effectiveness, slightly more than half of the students in the 1970 survey report that about half the time or more often "I have a difficult time in expressing myself in written reports, examinations, and assignments." Similarly, about 30% of the 1970 eleventh grade group indicated that about half the time or more frequently "slow reading holds me back in my school work." A slightly larger proportion, about one-third of the students, indicated that about half the time or more frequently, "I read material over and over again without really understanding what I have read." A little more than half of the students said they were dissatisfied or neither satisfied nor dissatisfied in answer to the question, "Are you satisfied with the progress you are making in developing your abilities in reading, thinking, and writing?" All of these tabulations of students' reports are quite similar to those obtained from the same questions in 1960, indicating that students' perceptions of the effectiveness of their school experiences have not changed much over this period. They indicate that a large portion of the students were not satisfied with the quality of the education they were receiving.

With respect to the appropriateness of the educational work given them in relation to their needs, the 1970 students reported as follows. Well over half said that about half the time or more often "lack of interest in my school work makes it difficult for me to keep my attention on what I am doing." A little less than half of the students reported that about half the time or more often "I feel that I am taking courses that will not help me much in an occupation after I leave school." Somewhat less than half of the students responded to the question "How well do your school courses meet your needs?" with responses of somewhat, a little, or not at all. It is also discouraging to note that the average student indicates about nine hours a week in reply to the question, "On the average, how many hours do you study each week? Include study periods in school as well as studying at home." This figure appears to be just a little smaller than the number of hours per week reported in 1960. Most of the decrease is reported by the boys.

Further evidence regarding some of the deficiencies of our current educational program are provided by the previously published results from Project TALENT and the recently reported first findings from the program of the National Assessment of Educational Progress.

If our educational institutions are to play a new role in assisting young people to formulate goals and develop plans to strive toward individual fulfillment, a major strategy for the development of systems of education which will make this possible is essential. A careful examination of the requirements for such systems indicates that most of the new problems are psychological in nature. In many places and in many ages, education beyond the basic skills of reading, writing, and arithmetic has been synonymous with memorizing. Classical and modern languages, literature, and history were studied largely to be read and remembered. Mathematics and particularly science, when it was added to the curriculum, introduced some new dimensions to learning activities. These included problem solving, interpreting data, and the application of principles to new situations. In spite of some of these new emphases, education, even in recent times, has consisted chiefly of learning the contents of a limited number of books.

The work of a psychologist, Edward Lee Thorndike, at the beginning of this century, removed some of the misconceptions on which the educational program was based and paved the way for a new look at the curriculum. The tremendous expansion of knowledge and published materials and the introduction of educational technology in recent years have required curriculum makers to take a new look at the contents of educational programs.

Even a cursory examination of the situation indicated that not all students should study the same courses. The improved precision in the measurement of individual differences also made it abundantly clear that the same textbooks and the same methods were not equally appropriate for all students. These various factors led to much discussion of the need for individualizing instruction. However, as those who have visited the classrooms know, change has been very slow in coming.

Attaining the goal of individual fulfillment for each child involves a number of psychological problems. The solution of these problems will require both the application of accepted psychological principles and also the development of a considerable body of new psychological knowledge. An interesting outcome of the analysis of systems requirements is that the application of psychological principles is necessary not only for the designer of the educational program, but also is required of the student himself.

Some of the primary needs for a system of education which can be expected to be effective in assisting students to formulate their goals, plan their development, and manage a program leading toward individual fulfillment are:

1. An understanding by the student of his own values, interests, current level of ability, and knowledge in relation to the requirements of a wide variety of possible activities and roles. In a broad sense, such an understanding must include the basic facts regarding the nature of learning and individual differences. The student must also have enough information about the fundamentals of psychological measurement to enable him to interpret the results he obtains on various tests and assessment instruments.

2. A reasonable degree of skill in decision making and planning. This should include skills in analyzing and defining problems, in developing alternate solutions to these problems, and in using various types of evaluation procedures to choose from among the possible solutions in an effective manner. It also includes the ability to prepare a sequential plan using a clear statement of desired outcomes and working back to obtain a definite schedule and a set of procedures for determining the required progress at each point if the plan is to be realized.

3. Knowledge and skill in the management of behavior and behavior modification. This includes a knowledge of the role of incentives, operant conditioning, and related psychological principles. Although this together with the psychology referred to in the previous paragraphs may seem like a substantial amount of psychological knowledge for an adolescent to learn, it is quite impossible for the student to take the responsibility for formulating his own goals and planning and managing his program to achieve individual fulfillment without this understanding of the principles underlying human behavior. Students are demanding freedom to choose. Choices are obviously an empty exercise of selecting labels unless the students have these basic psychological understandings. The development of effective programs for making these types of knowledge and skill accessible to young people should keep a number of psychologists busy for some years.

4. Another important need in developing these new systems of education is a sophisticated procedure for identifying the program of studies, or curriculum, required by each student on the basis of his plans for individual fulfillment. Analogs of the types of task analysis developed in connection with industrial training programs are needed. These will be much more complex when applied to not only the occupational requirements, but also the leisure time, cultural, and social and civic responsibilities involved in the student's plans for individual fulfillment. It should be fairly easy to identify

much deadwood in the present curriculum offerings. The development of valid procedures for choosing the most relevant from among the many possible choices in terms of abilities, knowledge, and skills will be much more difficult. The work of James A. Dunn on PLAN represents a first effort in this area.

5. Another area requiring substantial effort on the part of psychologists relates to identifying the procedures which will be most effective for assisting the student to learn those abilities and knowledges he has selected. Some of the concepts of John B. Carroll and Benjamin Bloom relating to mastery learning appear promising as does also the work by David P. Ausubel on the role of advance organizers and anchoring ideas in meaningful learning. Some of the most promising concepts relating to classroom learning are those developed by Robert M. Gagne regarding hierarchies, prerequisites, sequences, periodic reviews, and processes of coding and retrieval in learning. Psychologists have only begun to apply some of these concepts to school learning tasks.

6. Psychologists must also do much to improve available measuring instruments if these are to be effective in their new roles in this type of an educational system. When the individual student plans a program of studies in terms of objectives stated in performance terms, it is essential to have measuring instruments available to determine whether or not the performance standards have been met. For the relatively specific objectives achieved along the way, it is easy to determine whether the performance standard has been achieved or not. However, for some of the intermediate and long-range objectives, especially the scalable ones such as reading comprehension, vocabulary, arithmetic reasoning, decision-making, etc., it is somewhat more difficult to describe the ability level reached by the student. The work of Ralph W. Tyler in relation to National Assessment of Educational Progress, Robert Glaser in connection with the Individually Prescribed Instruction system, the instruments in Project TALENT, and the work of William M. Shanner in Project PLAN are all indicators of the direction which measurement and assessment will have to take if it is to perform its new role effectively. There is also a great need for valid measures for some of the other important outcomes of an effective educational program such as independence, resourcefulness, responsibility, and motivation.

7. A major task for psychologists is the development and application of techniques for preparing teachers for the new roles required by these

changes in education. The work of Dwight Allen on microteaching at Stanford University and the more recent developments by Walter Borg at the Far West Regional Educational Laboratory are examples of new approaches to using technology to change the roles and behavior patterns of teachers. Margaret Steen's recent work in developing a program for assisting experienced teachers to acquire the knowledge and skills essential to perform within the PLAN system of computer-supported individualized education is an excellent example of the effectiveness of a systematically planned and carefully monitored system.

8. The last, and in many ways, the most important function of psychologists in producing educational change is the development and monitoring of new systems in education. Psychology plays such a large role in so many aspects of new educational programs that it appears essential to have a person with training and experience in psychology to design, evaluate, and redesign these new educational systems. During the past fifteen years a very large amount of money has been spent on efforts to improve education. These expenditures have resulted in important contributions to our knowledge about education. They have also produced some changes in educational practices. There is evidence that in some schools improvement has taken place in the learning of such basic skills as reading. However, for the most part, the evidence clearly indicates that no improvement or only slight gains characterize today's schools as compared with those ten or fifteen years ago.

Is the possibility of major improvement in education an illusion? It appears not. As examples of what new approaches and the application of systems methods can do to specific training courses, the work of David Markle and Jerry Short suggest that there are major possibilities for improvement. The instructional system developed by David Markle to teach First Aid was found to result in twice as much learning in three-fourths as long a period of time when compared with several widely used courses which appeared typical of the current level of instructional effectiveness. The electronics training course developed by Jerry Short produced similar dramatic gains as compared with the previous instructional program. These intensive efforts on comparatively short instructional systems suggest the possibility that major improvements in the educational system can be achieved.

Another development which offers substantial promise as a contributor to the new type of educational system needed is the availability of the Project TALENT Five-Year Follow-Up data. These data provide, for the first

time, test scores and background information obtained in high school for students who when five years out of high school planned careers in a wide variety of occupational fields. It has been possible to follow up 150,000 of the more than 400,000 students included in the original sample in 1960. These data provide, for the first time, a sound basis for the individual student to use in comparing his pattern of abilities and interests with those of students who have entered or are preparing to enter a specific occupation.

Another important development is the availability of high speed electronic computers. Any system of individual development requires very extensive record-keeping and other clerical activities such as test scoring, monitoring progress, and providing predictions based on available data. It appears that only through the use of a computer or similar device can the necessary student accounting be done at a sufficiently reasonable cost to make possible an individualized program.

A related development in the field of educational technology is the availability of many new devices for presenting materials to the student. In addition to greatly improved textbooks and workbooks, there are now many audio tapes, film strips, concept films, and related devices to assist the student in his educational program.

Finally, the availability of systems procedures for studying costs in relation to benefits and providing more sophisticated methods for administrators to use in evaluating and reporting the effectiveness of their educational programs should provide an important incentive for change. The administrator in the past has evaluated his schools primarily on the quality of the school buildings and facilities and other such secondary criteria as teacher-pupil ratio. In the future, the schools are going to become increasingly accountable for the development of the individual students in their care.

Conclusions

Education is ready for important changes. Our affluent society gives young people much more freedom to choose and to plan a program of individual development in accordance with their values, interests, and potentialities

for specific types of roles and activities. The schools have not met this challenge and many of the nation's young people lack both purposes and plans. This challenge to education can best be met through psychological studies and the application of psychological knowledge in the development of new systems of education. Whether one accepts individual fulfillment or some other function as the role of the school, psychologists are needed to initiate a program which will orient students and help them to formulate goals and plans for their individual development. Psychologists are also needed to assist in defining the abilities, skills, knowledge, and personal characteristics which will be of most benefit to the student in achieving his goals.

Psychologists need to turn to the study and development of effective techniques for individual learning of the types of skills, abilities, and content which are essential for their individual development. There are many problems of assessment and measurement for which psychologists will have to find solutions if students are to be assisted in their individual development with respect to all important objectives in their individual programs. Much effort by psychologists in improving the effectiveness of teachers in their new educational roles in the classroom is essential to achieve an effective learning environment for individual students. Finally, psychologists must assist in the design and monitoring of new systems of education which will make possible the efficient and effective development of each of our individual students. For many of us there seems no more important problem in our nation or our profession than producing a truly effective system of education which will permit each student to formulate and plan an educational program which will enable him to achieve a fully satisfying life pattern.